

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of the claims in the application:

- 1 1. (Original) A proximity detector, comprising:
 - 2 a magnetic-field-to-voltage transducer for providing a magnetic field signal indicative of
 - 3 an ambient magnetic field;
 - 4 a peak detector responsive to said magnetic field signal for providing a tracking signal
 - 5 which substantially follows at least a portion of said magnetic field signal, wherein said peak
 - 6 detector comprises:
 - 7 a first digital-to-analog converter for providing a first output signal having a first
 - 8 step size;
 - 9 a second digital-to-analog converter for providing a second output signal having a
 - 10 second step size larger than said first step size; and
 - 11 a summation circuit coupled to said first and said second digital-to-analog
 - 12 converters for providing said tracking signal as a sum of said first and said second output
 - 13 signals.
- 1 2. (Previously Presented) The proximity detector of Claim 1, further including a too-far-behind
 - 2 comparator for providing a too-far-behind signal which changes state when said magnetic field
 - 3 signal varies from said tracking signal by a predetermined amount, wherein said tracking signal
 - 4 is controlled in response to said too-far-behind signal to include steps associated with the first
 - 5 step size when the too-far-behind signal is in a first state and to include larger steps associated
 - 6 with the second step size when the too-far-behind signal is in a second state.
- 1 3. (Original) The proximity detector of Claim 2, wherein said peak detector further comprises:
 - 2 a first counter for providing a first count signal to said first digital-to-analog converter;
 - 3 and

4 a second counter for providing a second count signal to said second digital-to-analog
5 converter.

1 4. (Previously Presented) The proximity detector of Claim 3, wherein in response to the first
2 state of said too-far-behind signal said second counter is stepped in association with a terminal
3 count of said first counter, and in response to the second state of said too-far-behind signal said
4 second counter is also stepped.

1 5. (Original) The proximity detector of Claim 2, wherein said too-far-behind comparator is
2 responsive to an offset signal that differs from said magnetic field signal by an offset amount.

1 6. (Previously Presented) The proximity detector of Claim 1, further including a POSCOMP
2 comparator for providing a POSCOMP signal, which changes state when said magnetic field
3 signal varies from said tracking signal by a predetermined amount, wherein at least one of said
4 tracking signal or said magnetic field signal is forced towards the other one of said tracking
5 signal or said magnetic field signal in response to changes in state of said POSCOMP signal.

1 7. (Original) The proximity detector of Claim 6, wherein said POSCOMP comparator is
2 responsive to a threshold signal that differs from said tracking signal by a predetermined amount.

1 8. (Original) The proximity detector of Claim 6, wherein said tracking signal is brought to
2 substantially the same level as said magnetic field signal in response to changes in state of said
3 POSCOMP signal.

1 9. (Original) The proximity detector of Claim 6, wherein said magnetic field signal is brought
2 to substantially the same level as said tracking signal in response to changes in state of said
3 POSCOMP signal.

1 10-19. Canceled